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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/660,980

09/12/2003

Anthony Teillet

100318-00111

6120

7590

03/09/2005

Robert C. Klinger
Jackson Walker LLP.
Suite 600
2435 North Central Expressway
Richardson, TX 75080

EXAMINER

DINH, TRINH VO

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,980

Applicant(s)

TEILLET ET AL.

Examiner

Trinh Vo Dinh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 30-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 13, 14, 21-23 and 26-29 is/are rejected.
- 7) ☒ Claim(s) 4, 6-12, 15-20, 24-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- Group I: Claims 1-29 drawn to a dual band dipole antenna having slidably dielectric members over microstrip feed line classified in class 343, subclass 810.
- Group II: Claims 30-37 drawn to an antenna having conductor reflector with two arms classified in class 343, subclass 700ms.
- Group III: Claims 38-48 drawn to a dual band antenna having varying width electrically conductive member classified in class 343, subclass 795.

During a telephone conversation with Robert Klinger on 03/03/05, a provisional election was made without traverse to prosecute the invention of group I, claims 1-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 30-48 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions.

Specification

1. The disclosure is objected to because of the following informalities:

In the specification, page 1, line 5, after "2002", -- now Patent No. 6,621,465-- should be inserted

Appropriate correction is required.

Claim Objections

2. Claims 5, 13, 21, 23-25 and 27 are objected to because of the following informalities:

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In claim 5, line 1, "the first microstrip portion" has no antecedent basis. The antecedent basis is found in claim 4. The Examiner suggests changing claim 5 to depend on claim 4 instead of claim 2.

In claim 13, line 2, "the first dielectric member" has no antecedent basis. The antecedent basis is found in claim 3. The Examiner suggests changing claim 13 to depend on claim 3 instead of claim 2.

In claim 13, "the underlying first microstrip portion" has no antecedent basis. The Examiner suggest changing claim 13 to depend on claim 4 instead of claim 2 and changing "the underlying first microstrip portion" to --the first microstrip portion--. Doing so would provide an antecedent basis for "the first microstrip portion".

In claim 21, "said antenna element" has no antecedent basis. The Examiner suggests changing "said antenna element" to --said dipole element--.

In claim 23, line 1, "the antenna elements" should be changed to --the dipole elements--.

In claim 24, line 3, "the microstrip" has no antecedent basis. The antecedent basis is found in claim 2. The Examiner suggests changing claim 23 to depend on claim 2 instead of claim 1. Doing so would provide the antecedent basis for "the microstrip" recited in claim 24.

In claim 25, line 5, "microstripmicrostrip" should be removed.

In claim 27, "the antenna dipoles" has no antecedent basis.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 21-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 21, line 2, the claim language "an arm extending at 45°" is vague. It is indefinite because it is unclear what "an arm extending at 45°" respect to.

Claim 22 is rejected because of its dependency.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Gottl et al (USP 6,333,720).

Gottl discloses, in Figs. 4-6, an antenna having a first arrangement of dipole elements (1a, col. 3, lines 30+) forming a first band (col. 3, lines 25-29) and a second arrangement of dipole elements (3a, col. 3, lines 30+) forming a second band (col. 3, lines 25-29). Note the recitation of "Dual band, dual pol, 90 degree azimuth bandwidth, variable downtilt" can not rely upon to define over the cited art since the recitation is merely preamble which is denied the effect of a limitation wherein the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause.

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-3 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gottl in view of Le et al (US 2005/0001778).

With respect to claim 2, Gottl discloses every feature of the claim invention except a microstrip feeder. Le discloses a first band (dipoles 14) being fed by a microstrip (30, 64) disposed upon a printed circuit board (50). The use of microstrip networks for feeding antennas has been well known in the art. Therefore, to provide Gottl's antenna with microstrip network as taught by Le for feeding dipole elements would have been obvious to one skill in the art.

With respect to claim 3, Le discloses, in claims 12-13, a first dielectric member (56) slidably disposed over the microstrip (64).

With respect to claims 13-14, Le discloses a thin member (54) disposed between the first dielectric member (56) and the underlying microstrip portion (64) and attached over the microstrip portion.

9. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gottl in view of Nesic et al (US 2004/0021613).

With respect to claim 2, Gottl discloses every feature of the claim invention except a microstrip feeder. Nesic discloses, in Fig. 1, a dipole element (16) being fed by a microstrip (18) disposed upon a printed circuit board (10). The use of microstrip networks for feeding antennas

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has been well known in the art. Therefore, to provide Gottl's antenna with microstrip network as taught by Nesic for feeding dipole elements would have been obvious to one skill in the art.

With respect to claim 5, Nesic discloses, in Fig. 1, the microstrip network comprising a first microstrip portion (30) feeding a second and a third microstrip portion (30, paragraph [0049]) each having a serpentine pattern.

10. Claims 21 and 23, as the best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gottl (USP 6,333,720) in view of Wood et al (US 6,211,840).

With respect to claim 23, Gottl discloses substantially the claimed invention as noted above in claim 1. Gottl further discloses the antenna elements (1a, 3a) being dipoles (col. 3, lines 60+). However, Gottl does not suggest a balun capacitively coupled to one said dipole. Fig. 2 of Wood shows a balun (7) capacitively coupled to one said dipole (9). It would have been obvious to one skill in the art to employ Wood's balun to Gottl's dipole antennas in order to improve the antenna's performances.

With respect to claim 21, Wood discloses at least one the antenna element (Fig. 3) having an arm (13) extending at 45°.

11. Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gottl (USP 6,333,720).

With respect to claim 26, Gottl discloses every feature of the claimed invention except the first band being a cellular band and the second band being a PCS band. However, it is fundamental knowledge that an antenna is capable of being scaled or tuned to any desired frequency, including the cellular band and the PCS band (attached document "Antenna Frequency Scaling" discloses a dimension of an antenna can be redesigned for any frequency

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band as long as all of the measurement of the original antenna are scaled based on the formula). Therefore, it would have been obvious to one of ordinary skill in the art to scale Gottl's antenna elements to operate in the cellular band and PCS band since select desired operation frequency band involves the elementary application such fundamental knowledge.

With respect to claim 27, Gottl discloses, in Fig. 4, a center arrangement of the antenna dipoles (3a), and a pair of dipole arrangements (1a) disposed along each side of the cellular band antenna dipoles (3a).

With respect to claim 28, Gottl discloses the PCS band antenna dipoles (1a) being mechanically configured differently than the cellular band antenna dipoles (3b) to reduce cross polarization.

With respect to claim 29, Gottl discloses, the PCS antenna dipoles (1a) having one arm extending at an angle offset at least 45 degrees from an arm of the other dipole (shown in Fig. 5, one arm of a dipole 1a is extending at an angle about 90 degree from an arm of the other dipole 1a)

Allowable Subject Matter

12. Claims 4, 6-12, 15-20 and 24-25 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims and/or rewritten to overcome the objections set forth in the office action.

13. Claim 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

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The cited art of record fails to teach the microstrip comprising a first microstrip portion having a serpentine pattern with the first dielectric member slidably disposed thereover, or a second dielectric member slidably disposed over the second microstrip portion, or at least one said antenna element has a first arm extending generally horizontal, and another opposite second arm extending at 45° with respect to the first arm or the Balun is capacitively coupled to the microstrip, and the other said dipole is directly connected to a ground plane formed proximate the microstrip to form a localized contact.

Inquiry

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Trinh Vo Dinh
March 6, 2005

